

DRAG REDUCTION USING MALEATED FATTY ACIDS

Abstract of the Disclosure

Non-polymeric drag reducing agents in the form of maleated fatty acids and the esters thereof and the organic, inorganic or amine salts thereof are described herein. These additives are useful to reduce drag in hydrocarbon fluids and multi-phase fluids of hydrocarbon(s) and water. No injection probes or other special equipment is expected to be required to introduce the drag reducing agent into the liquid stream, nor is grinding (cryogenic or otherwise) of the additive necessary to form a suitable drag reducing agent. The drag reducing additives of the invention are not subject to shear degradation and do not cause undesirable changes in the emulsion or fluid quality of the fluid being treated, or undesirable foaming.